

WHAT IS CLAIMED IS:

1. A method of forming a mask pattern, comprising the steps of:

carrying out a formatting operation for generating formatted data obtained by formatting authoring data; and generating a mask pattern by making the formatted data obtained from the step of carrying out a formatting operation correspond to basic pattern information obtained from basic signal pattern data necessary for a plurality of types of optical disks.

2. A method of forming a mask pattern according to Claim 1, wherein the basic pattern information is obtained by processing the basic signal pattern data necessary for the plurality of types of optical disks using a computer.

3. A method of forming a mask pattern according to Claim 2, wherein the basic pattern information is previously recorded in a memory, and the recorded basic pattern information is used in the step of generating a mask pattern to generate the mask pattern.

4. A method of forming a mask pattern according to Claim 1, wherein, when the various types of optical disks

are formed to record data in the form of pits thereon, the basic pattern information includes a plurality of types of pit patterns.

5. A method of forming a mask pattern according to Claim 4, wherein the basic pattern information is parameter information of pit forms.

6. A method of forming a mask pattern according to Claim 5, wherein sizes of the pits are corrected for each of the plurality of types of pit patterns in accordance with the formatted data.

7. A method of forming a mask pattern according to Claim 5, wherein shifts in a direction of a time axis in the plurality of types of pit patterns are corrected in accordance with the formatted data.

8. A method of forming a mask pattern according to Claim 5, wherein slopes of edges of the pits of the plurality of types of pit patterns are controlled in accordance with the formatted data.

9. A device for forming a mask pattern, comprising:  
basic pattern information generating means for

generating basic pattern information from basic signal pattern data necessary for various types of optical disks;

mask pattern image generating means for generating a mask pattern image by making formatted data obtained by formatting authoring data correspond to the basic pattern information generated by the basic information generating means.

10. A device for forming a mask pattern according to Claim 9, further comprising a memory means for recording therein the basic pattern information generated by the basic pattern information generating means, wherein the mask pattern image generating means uses the basic pattern information recorded in the memory means in order to generate the mask pattern image.

11. A device for forming a mask pattern according to Claim 9, wherein, when the various types of optical disks are formed to record data in the form of pits thereon, the basic pattern information includes a plurality of types of pit patterns.

12. A device for forming a mask pattern according to Claim 11, wherein the basic pattern information is parameter information of pit forms.

13. A device for forming a mask pattern according to Claim 12, wherein sizes of the pits are corrected for each of the plurality of types of pit patterns in accordance with the formatted data.

14. A device for forming a mask pattern according to Claim 12, wherein shifts in a direction of a time axis in the plurality of types of pit patterns are corrected in accordance with the formatted data.

15. A device for forming a mask pattern according to Claim 12, wherein slopes of edges of the pits of the plurality of types of pit patterns are controlled in accordance with the formatted data.

16. A method of producing an optical disk, comprising the steps of:

carrying out a formatting operation for generating formatted data obtained by formatting authoring data; and  
generating a mask pattern by making the formatted data obtained from the step of carrying out a formatting operation correspond to basic pattern information obtained from basic signal pattern data necessary for various of types of optical disks;

forming a master mask from the mask pattern generated in the step of generating a mask pattern;

forming a metal master using the master mask formed in the step of forming a master mask; and

forming a completed optical disk using the metal master formed in the step of forming a metal master.

17. A method of producing an optical disk according to Claim 16, wherein, in the step of forming a metal master, the master mask is used to expose an entire disk coated with resist to light as a result of projecting the light thereon, a development operation is performed on a predetermined portion of the exposed disk coated with resist, an electrically conductive film is formed, and an electrotyping operation is carried out while the electrically conductive film serves as an electrode, whereby the metal master is formed.

18. A method of producing an optical disk according to Claim 16, wherein, in the step of forming a completed optical disk, the metal master is used to perform injection molding of resin, after which various films are deposited in order to form the completed optical disk.

19. A method of producing an optical disk according to

Claim 16, wherein, based on an evaluation result of the metal master formed by the step of forming a metal master, the precision with which the mask pattern is formed in the step of forming a mask pattern is controlled in order to optimize a recording parameter.

20. A method of producing an optical disk according to Claim 16, wherein, based on an evaluation result of the completed optical disk formed in the step of forming a completed optical disk, the precision with which the mask pattern is formed in the step of forming a mask pattern is controlled in order to optimize a recording parameter.